

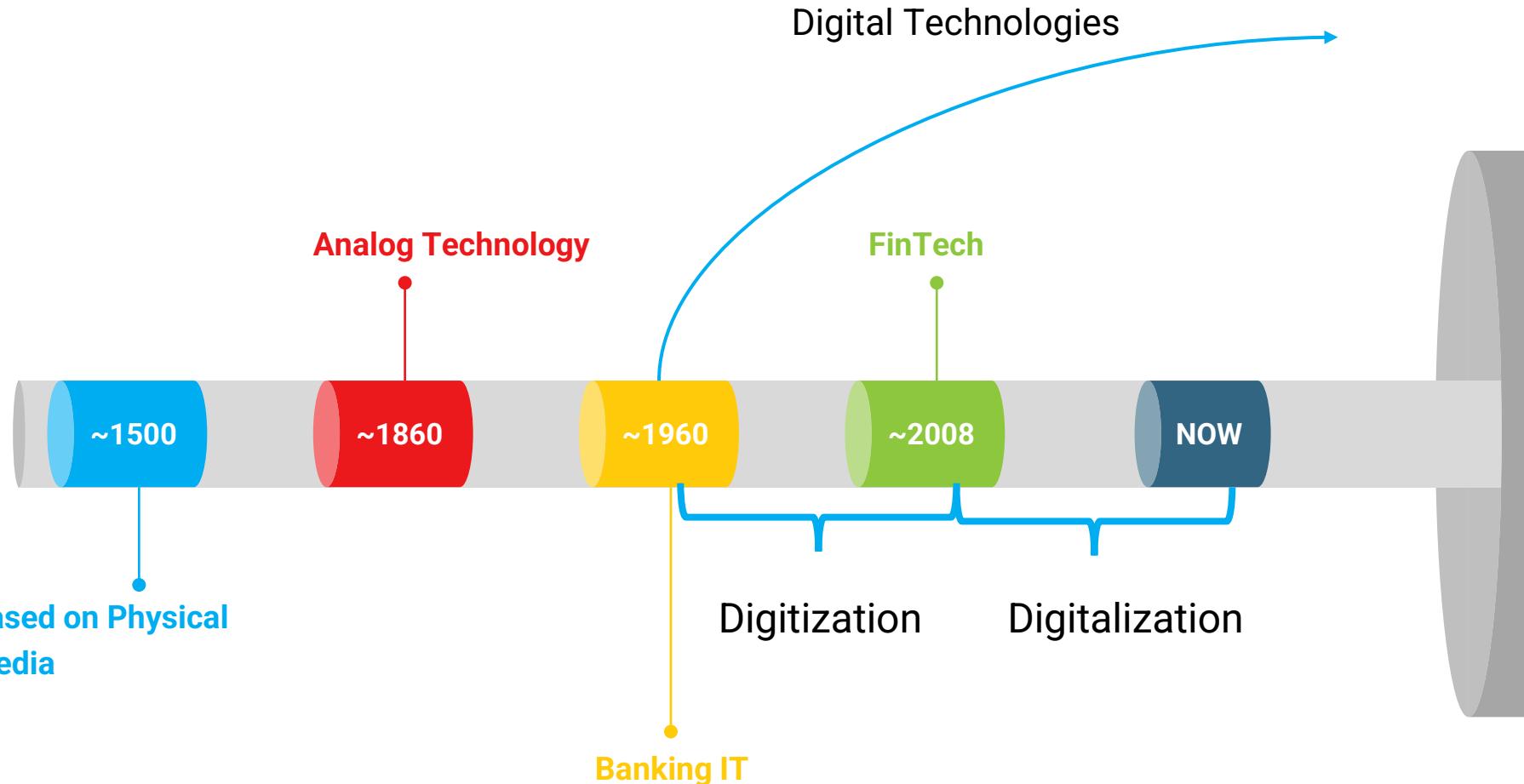
# Digital Transformation

**Topic 2 AFIN8014 FinTech and Innovation**

# Learning Objectives

- Differentiate digitization and digitalization phases in the financial industry
- Get insights into how digitalization intersects with finance
- Characterize the digital transformation level
- Understand the concept of the platform economy and how it transforming the financial sector

# Evolution of Financial Technologies



Source: Based on Rainer et.al., 2018

## Digitization of Finance Industry

Digitization is the process of storing, converting, processing or transferring information in a format recognized by computers.

## Digital Accounts 1960s

Accounts (deposits and money transactions) began to be stored and recorded in computers.

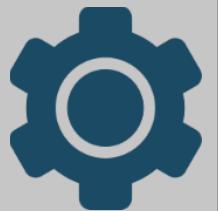


TC	WITHDRAWAL	DEPOSIT	BALANCE
14 X2	53,000.00	+++++3,019.21	60010
/14 IN	+++++121.85	+++++3,141.06	000008
/14 X2	140.00	+++++3,001.06	60010
/14 X1	+++++40,000.00	+++++43,001.06	60010
/14 X2	-20,000.00	+++++23,001.06	60010
/14 X2	-4,000.00	+++++19,001.06	60010
/14 FE	-15.00	+++++18,986.06	60010
7/14 X2	-2,000.00	+++++16,986.06	60010
7/14 X2	-3,000.00	+++++13,986.06	60010
7/14 X2	-2,000.00	+++++11,986.06	60010
7/14 X1	+++++10,000.00	+++++21,986.06	60010
			02 7120A 119.62
			02 11615 119.62
08/14 X2	20,000.00	+++++13,986.06	60010
08/14 X2	1,500.00	+++++14,486.06	60010
08/14 X2	100.00	+++++14,586.06	60010
08/14 X1	+20,222.61	+++++20,600.67	50010
	20,000.00	+++++10,600.67	60010
	+500.00	+++++11,100.67	60010
		10,100.67	60010
		11615 74.00	
			00981
			9.67 99
			9.67 99
			7120A 5.67 99
			11615 5.67 99
			74.00
			00981
			9.67 99
			7120A 5.67 99
			11615 5.67 99
			74.00
			00981

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## ATMs 1960s

Provide electronic interfaces to customers



## Swift (BIC) code

Consists of 8 to 11 characters

AAAA

BB

CC

DDD

Bank code

Country code

Location code

Branch code

Letters only

Letters only

Letters and digits

Letters and digits



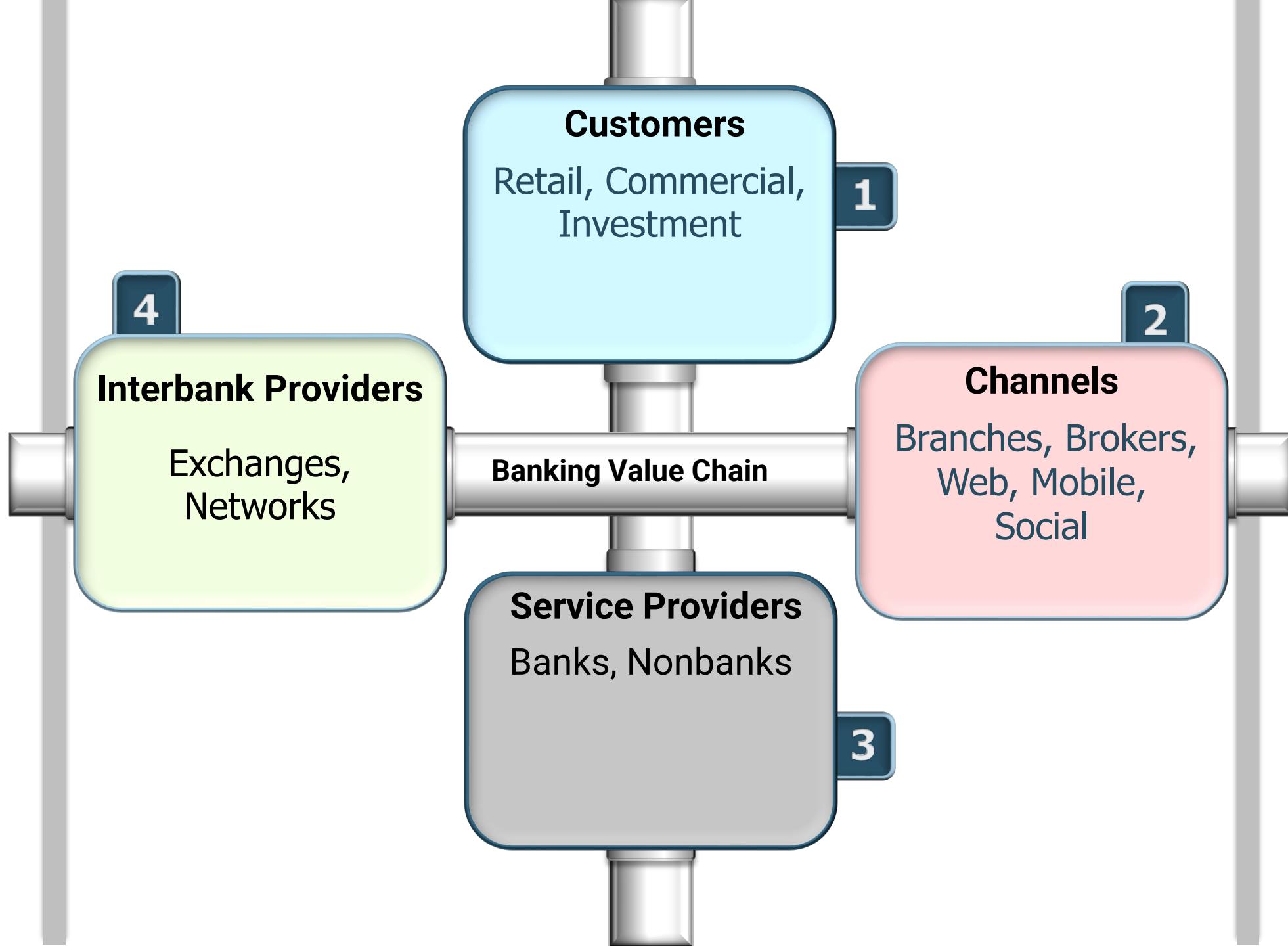
# SWIFT 1973

Established multinational  
electronic network

## Online Banking 1980s

More sophisticated electronic  
interfaces to customers





## Digitization of Finance Industry :

## Observations

### High IT investment

**1**

Globally, the banking sector spends an average of 4.7 percent to 9.4 percent of operating income on IT.

Gopalan et al. (2012)

**2**

The degree of vertical integration in the banking industry has remained high.

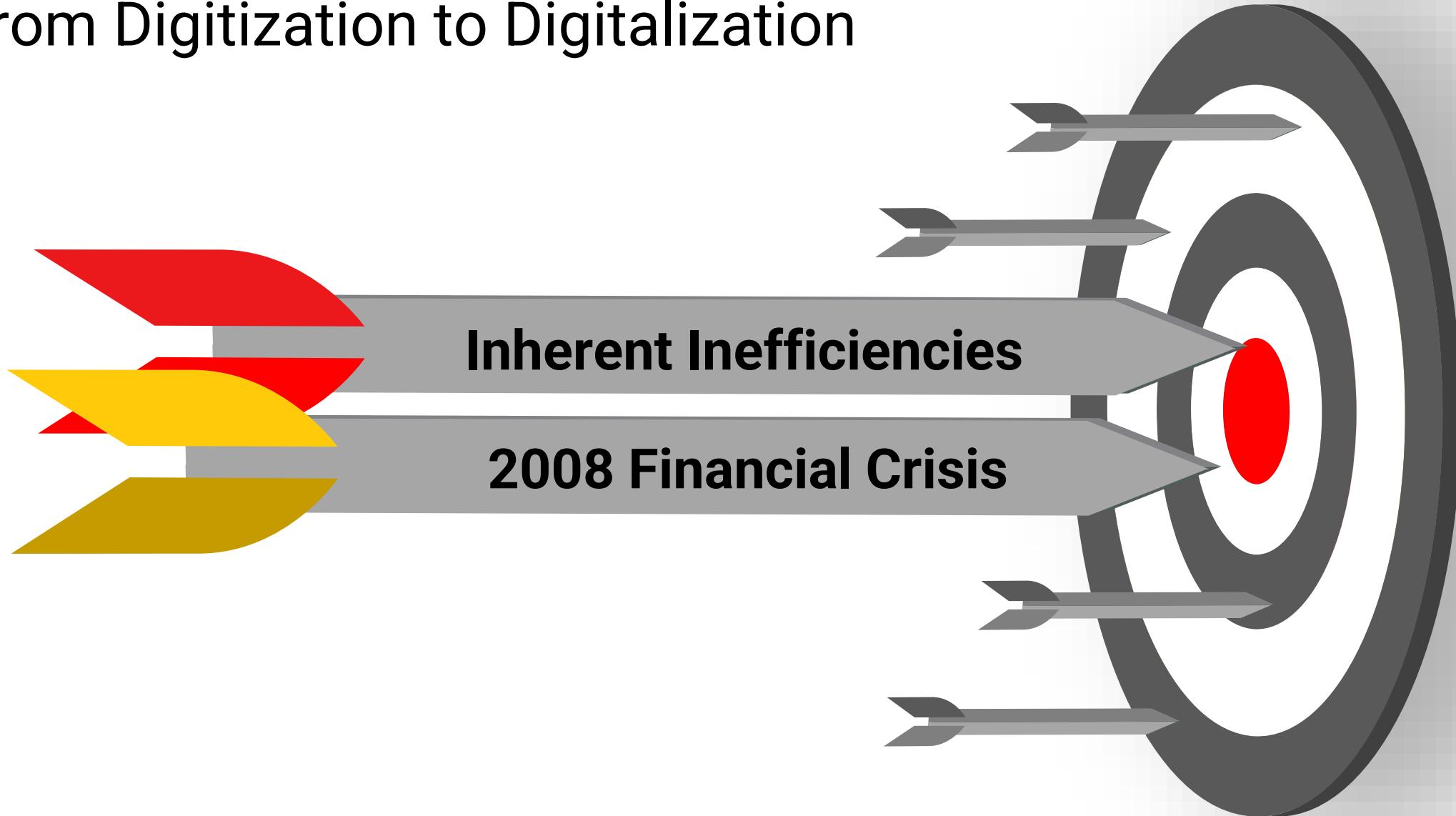
European banks: a reduction of 5 % of vertical integration from 82.2% (1995) to 77.2% (2002)

Gellrich et al. (2005)

**3**

The number of banks has decreased but the number of employees (i.e. manual workforce) has increased.

# From Digitization to Digitalization



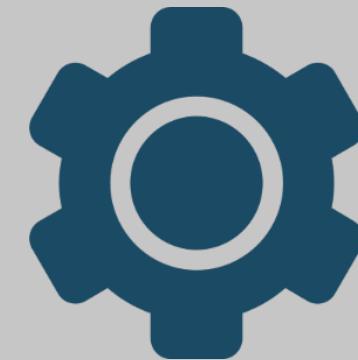
## **Digitization**

the process of storing, converting, processing or transferring information in a format recognized by computers.



## **Digitalization**

the change in social, business and economic behaviour on the adoption of new technologies.

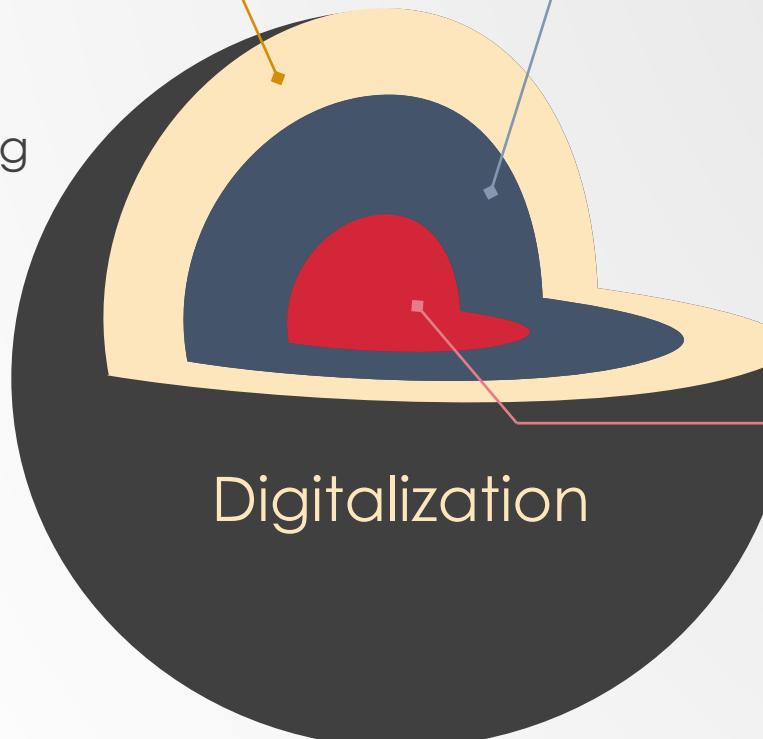


# From Digitization to Digitalization



## Technology Incorporation

- Internet of Things
- Cloud
- Virtualization
- Big Data
- Social Media
- Machine Learning
- 3D Printing
- Mobile Network



## New Business Models

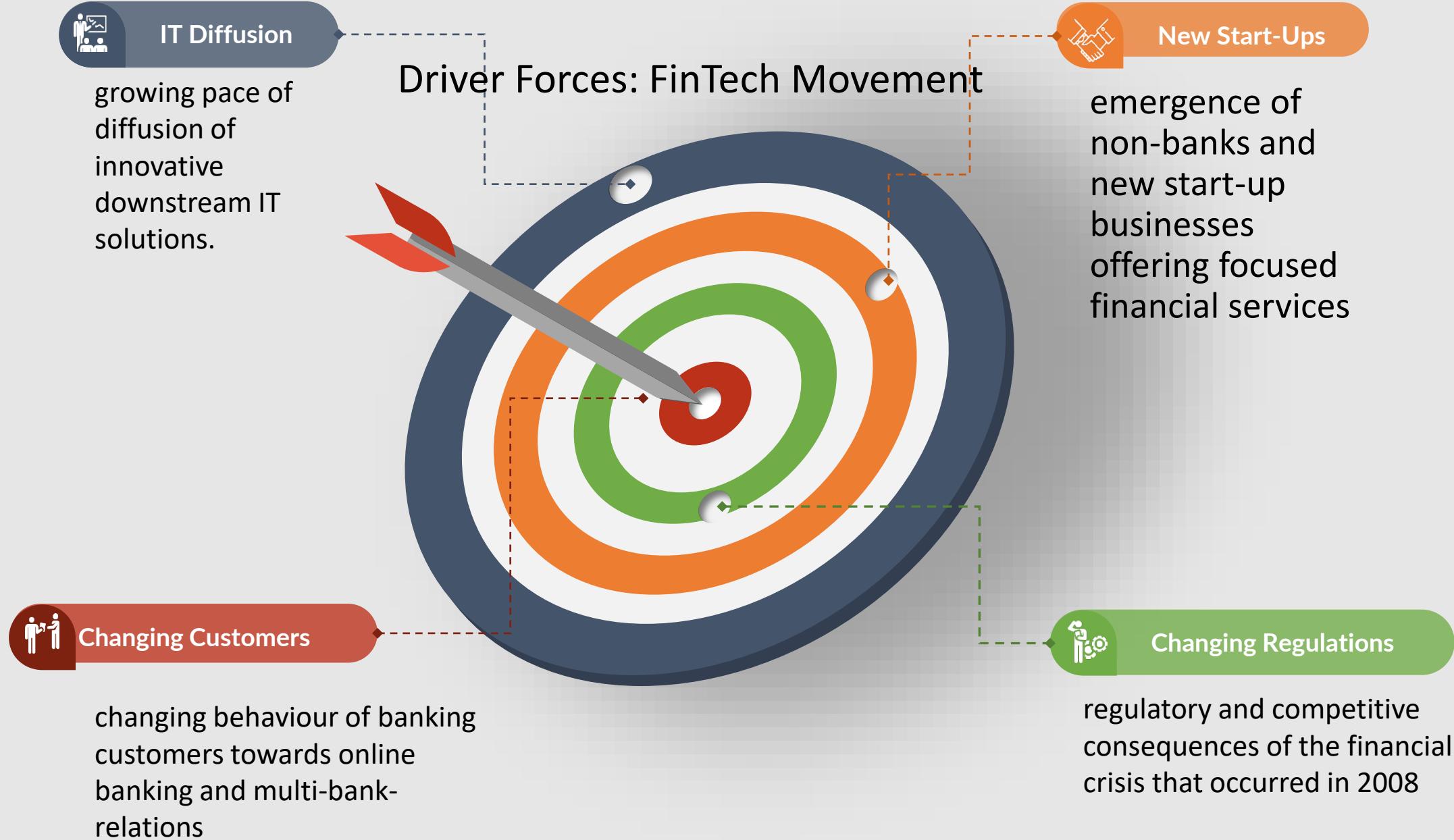


an eco-system where all markets and consumers could participate



## Participants Collaboration

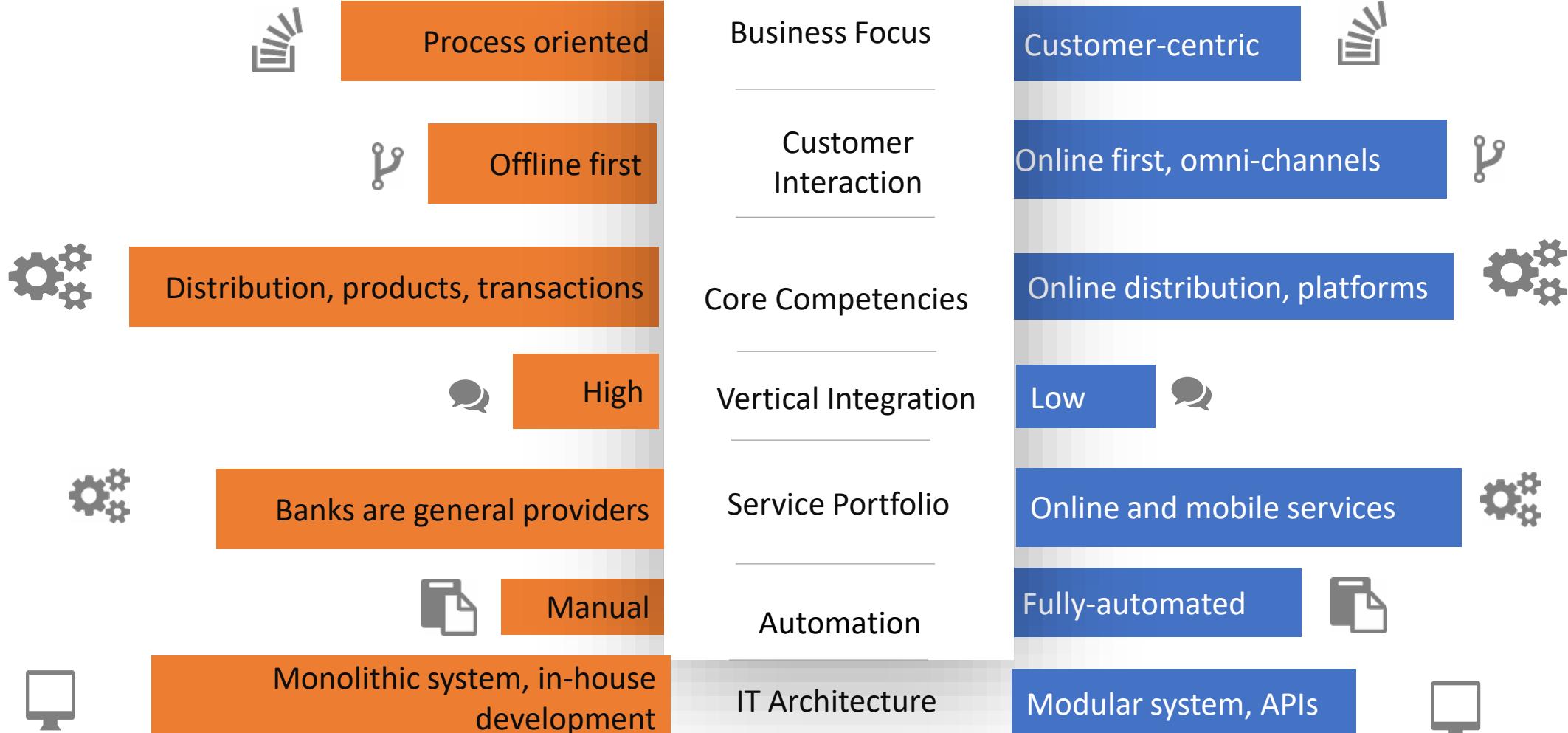
consumers, businesses and the government collaborate with systems, processes, people and the entire business community



## Banking IT (up to around 2008)

VS

## FinTech Movement (after 2008)



Digital Transformation Level: Internal Organization

## Banking IT (up to around 2008)

VS

## FinTech Movement (after 2008)



Small number of network partners



High margin in core business



Other financial providers



Hierarchical



High customer loyalty

Networking

Margins and Cost

Competitors

Culture

Customer Retention



Many specialized partners



Lower margin, higher competition



Star-ups and lateral entrants



Cooperative, agile



Reduced switching cost

Digital Transformation Level: Networking Organization

## Banking IT (up to around 2008)

VS

## FinTech Movement (after 2008)



Low equity requirement  
low supervision



Branch business and offline services



Centralized



Majority: Cash

Regulation

Business Model  
Innovation

Governance

Payment Style



Stricter rules, less protection



Online and mobile services



Distribution of tasks



Non-Cash

### Required Readings

1. Alt, R., Beck, R., and Smits, M. (2018). FinTech and the transformation of the financial industry. *Electronic Markets*, 28(3), 235-243. DOI: 10.1007/s12525-018-0310-9
2. EY, 2019, How banks could join the platform economy. Available at: [https://www.ey.com/en\\_gl/financial-services-emeia/how-banks-could-join-the-platform-economy](https://www.ey.com/en_gl/financial-services-emeia/how-banks-could-join-the-platform-economy)

## Digital Transformation Level: External Organization

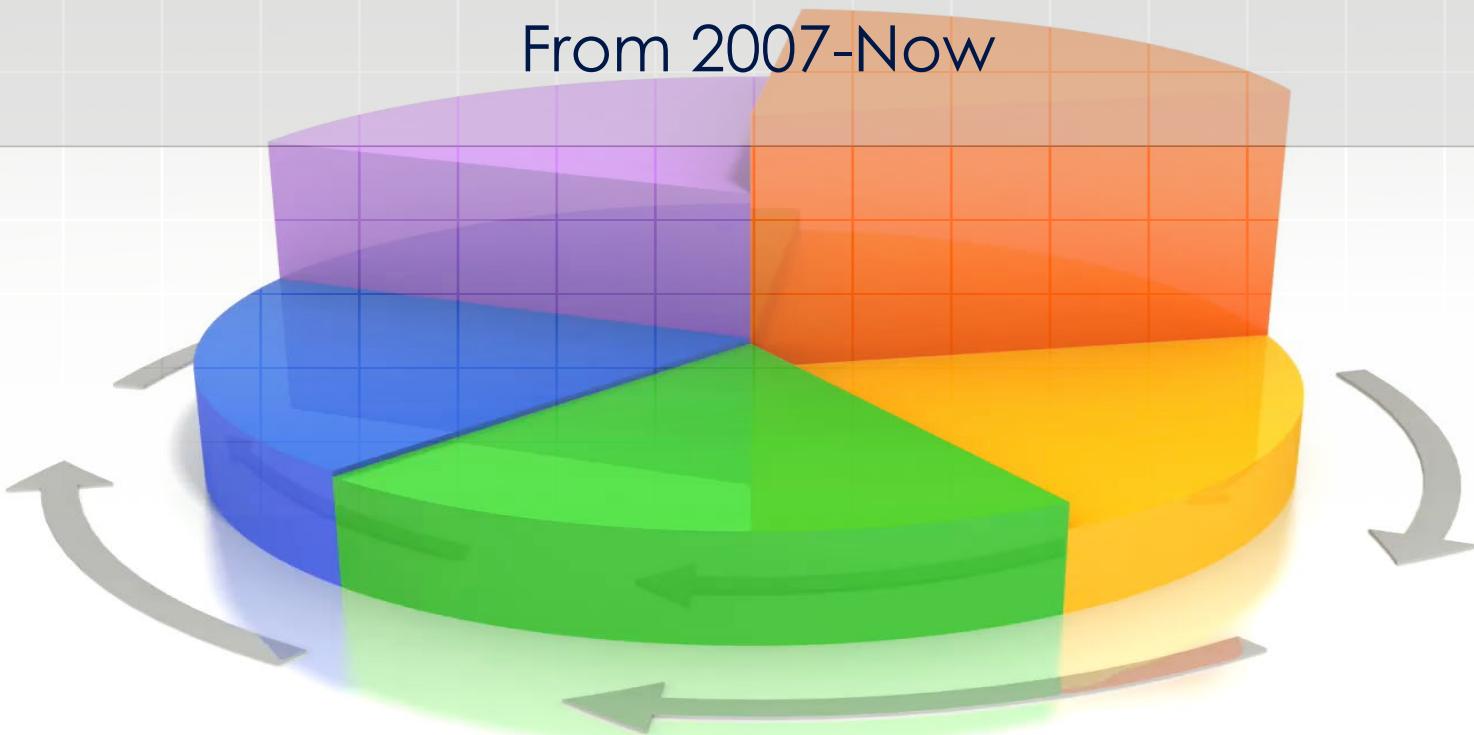
Source: Alt, et.al., 2018



From Digitization to Digitalization: Platform Economy

# Mobile Phone Market

From 2007-Now

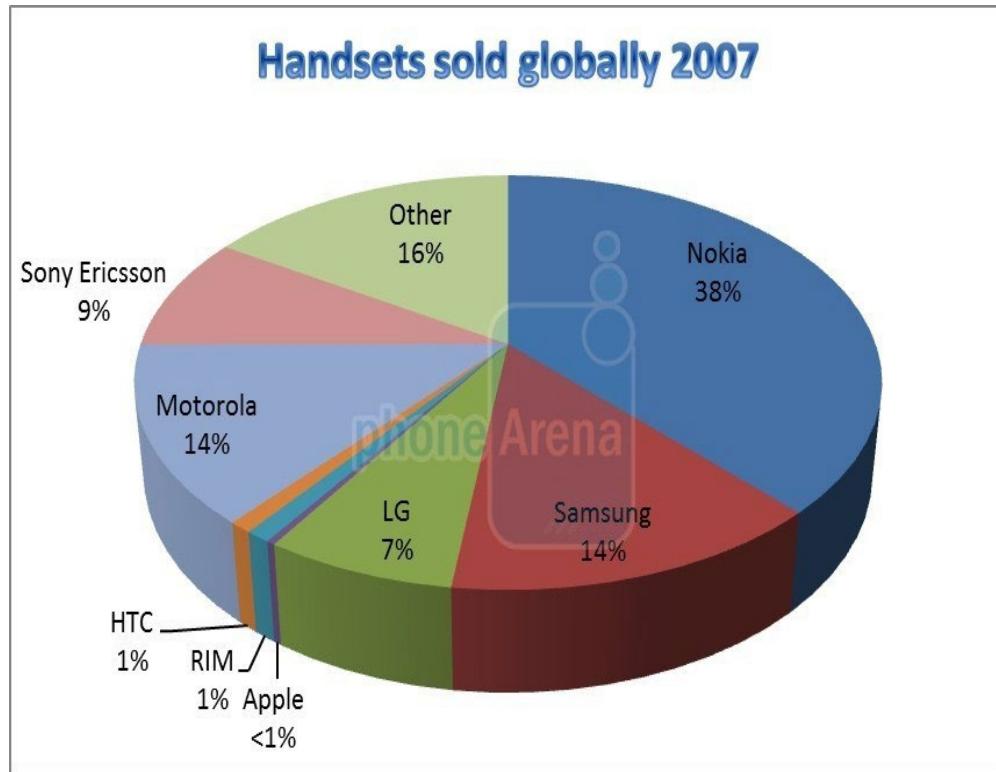




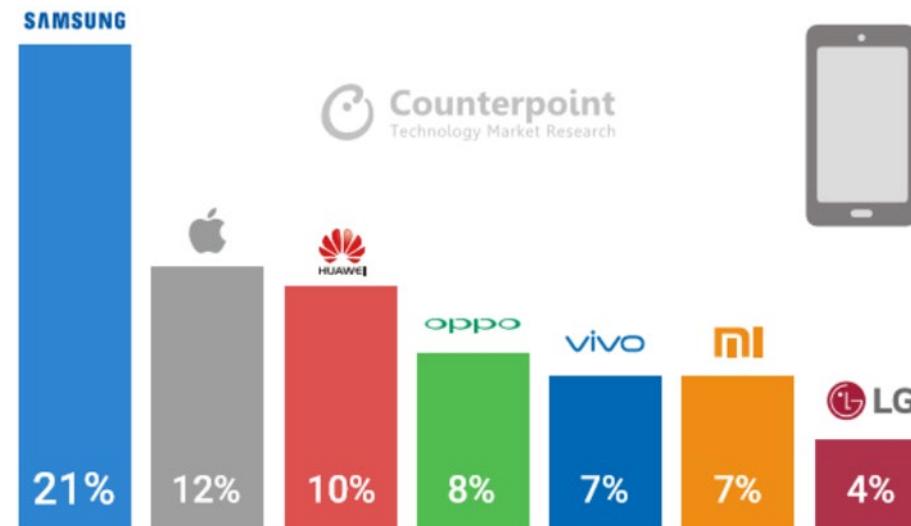
What is your first cell phone?



# Mobile Phone Market



## Global Smartphone Shipments Market Share Q3 2017



Source (1) 2007 : [https://www.phonearena.com/news/Four-years-of-disruption-cell-phone-industry-financials-2007-2011\\_id20153](https://www.phonearena.com/news/Four-years-of-disruption-cell-phone-industry-financials-2007-2011_id20153)

(2) 2017 retrieved from : <https://www.gizguide.com/2017/12/counterpoint-top-7-global-market-share.html>



Why Apple surged to become the second player in the cell phone market within 10 years' time?

What can we learn?



# Ant Financial

---

- One of the world largest FinTech Companies



**2003**  
The birth of Taobao



2003



**2014**  
The birth of Ant Financials

2014

**2018**  
\$150B Valuation  
\$14B largest single funding by a private company

2018



**2021**  
Will discuss in 'regulation' topic

2021



**2022?**



**2021**  
>\$315B valuation  
Ready for IPO



2003



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Taobao.com

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江湖大侠

由由 主要事迹: 淘宝第一代元老, 淘宝先锋。笑话连篇的开山掌门, 一个绝对会搞笑的人, 对淘宝的忠诚度为100%。淘宝诙谐俱乐部第一位雪皇级人物。....[详情>](#)

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更多...



Founded in US,  
1995;  
Entered the Chinese  
Market 2002



# Alipay: before Ant Financial

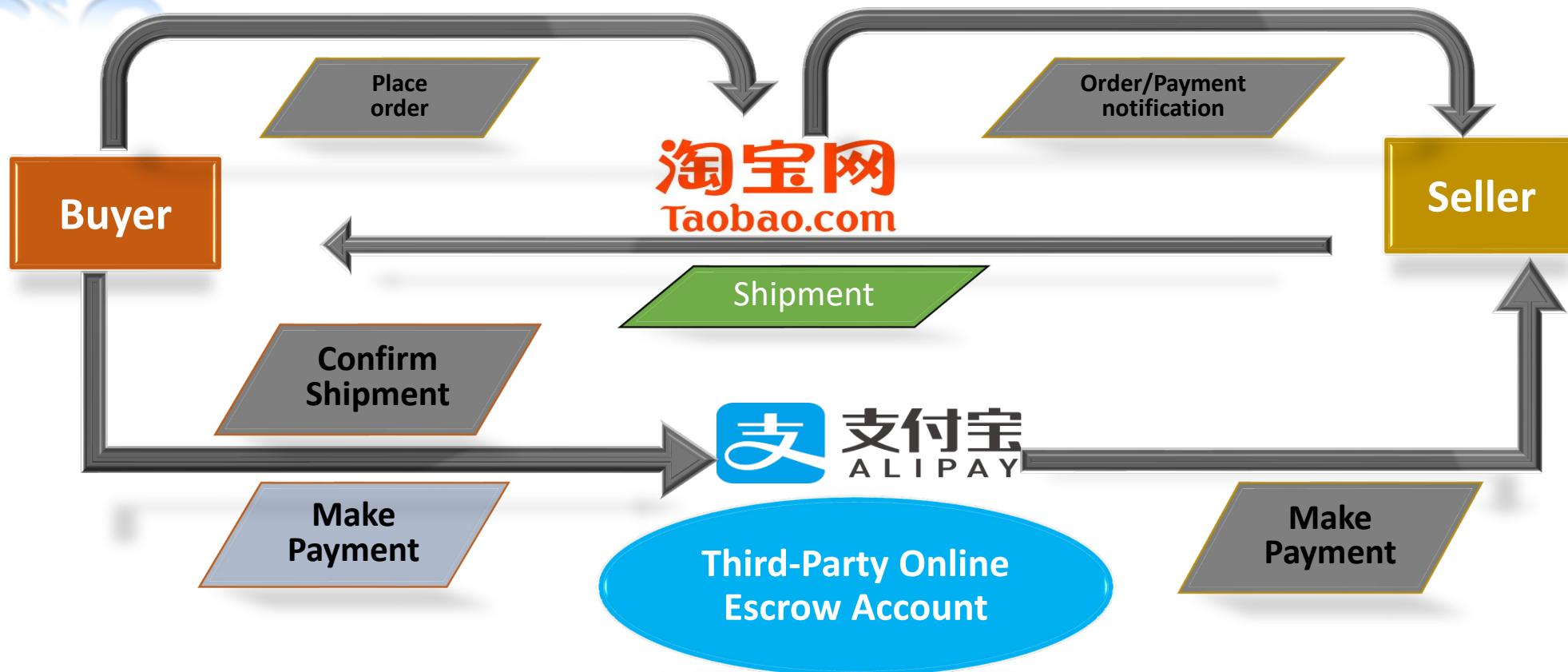
淘宝网  
Taobao.com



2003

Main hurdle: **lack of trust** between buyers and sellers online

Solution : Alipay- the escrow account of Taobao



# A Little Ant Challenges the Giant Banks

2003  
Founded



What has  
happened to  
Alipay from  
2003 to 2014?

2014  
Re-branched



What Services  
Ant Financial is  
offering ?

# In Class Case Study

## Prepare BEFORE Class



### The Rise of Ant Financial

Six years ago, Chinese fintech Ant Financial didn't exist. Today, it's one of the largest financial institutions in the world. Ant, an affiliate of Alibaba Group, is now three times bigger than Goldman Sachs (highest recent valuation in March 2021 \$315 billion, v. \$ 99 billion of Goldman Sachs). Having learnt the evolutional journey of Ant Financial together, please discuss the following questions in class.

1. What is the key successful driver to Ant's growth?
  
2. How does Ant's business model work?
  
3. How are Ant's financial services changing traditional finance?
  
4. How to compete with Ant Financial?
  
5. What happened to Ant Financial in 2021?